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A NOTE ON THE STATUS OF *GEHYRA BALIOLA* (DUMÉRIL AND DUMÉRIL, 1851) IN AUSTRALIA.

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ABSTRACT

An examination of specimens of *Gehyra* Gray from Papua New Guinea, the Torres Strait Islands, and Cape York Peninsula reveals that *Gehyra baliola* is predominantly a New Guinean species. Specimens collected from the Australian mainland which have in the past been attributed to *G. baliola* are not from this taxon. The only specimens of *G. baliola* found in Australian Territory occur on Darnley and Murray Islands in the northern Torres Strait. *Gehyra dubia* is present on several of the more southerly Torres Strait islands, whereas *G. oceanica* is not present in this area.

KEYWORDS: Reptilia, Gekkonidae, *Gehyra baliola*, distribution.

INTRODUCTION

The gekkonid lizard genus *Gehyra* has been the subject of considerable taxonomic revision. A number of new taxa have been described and the species composition for Australia now stands at 16: *G. australis* Gray, *G. baliola* (Duméril and Duméril), *G. borroloola* King, *G. catenata* Low, *G. dubia* Macleay, *G. minuta* King, *G. montium* Storr, G. *nana* Storr, *G. occidentalis* King, *G. pamela* King, *G. pilbara* Mitchell, *G. punctata* (Fry), *G. purpurascens* Storr, *G. robusta* King, *G. variegata* (Duméril and Bibron), *G. xenopus* Storr. The distribution and taxonomic status of several *Gehyra* species in northern Australia, particularly those on Cape York Peninsula and the Torres Strait Islands is uncertain. King (1983, 1984a) in reviewing the systematics of the previously considered widespread *G. australis*, recognised it as comprising 5 taxa: *G. australis*, *G. borroloola*, *G. robusta*, *G. occidentalis* and *G. dubia*. The latter species was restricted to Australia, east of the Gulf of Carpentaria and north along Cape York Peninsula including some Torres Strait Islands. From Cape York, Cogger (1986) listed *G. dubia*, *G. nana*, and possibly *G. baliola* ("status uncertain") suggesting that *G. baliola* was to be found as far south as Weipa on the Cape York Peninsula. From the Torres Strait Islands, Cogger (1986) included *G. baliola* and *G. oceanica*, but not *G. dubia*.

This communication clarifies the status of *G. baliola* on the Torres Strait Islands, and comments on the occurrence of *G. dubia* and *G. oceanica* in this region. The specimens examined came from the following institutions: AM, Australian Museum, Sydney; PNGM, National Museum and Art Gallery of Papua New Guinea; MNHN, Muséum National d'Histoire Naturelle, Paris.

SYSTEMATICS

Gehyra baliola (Duméril and Duméril)

Hemidactylus baliolus Duméril and Duméril, 1851: 38.
Peripia marmorata Macleay, 1877: 99.
Peripia brevicaudis Macleay, 1877: 99.

Type material: HOLOTYPE - MNHN 6574, New Guinea. HOLOTYPE of *Peripia marmorata*, AM R.29943, (MM MR 1201) Katau, near the Binaturi River, New Guinea. LECTOTYPE of *Peripia brevicaudis*, AM R.29947 (MM MR 931). Darnley Island, Torres Strait, Qld.

Additional Material. PAPUA NEW GUINEA: AM R.12156-57, 30 miles above D'Albertis Junction, Fly River, 6°00'S 141°15'E; AM R.24280, Lake Murray, 6°48'S

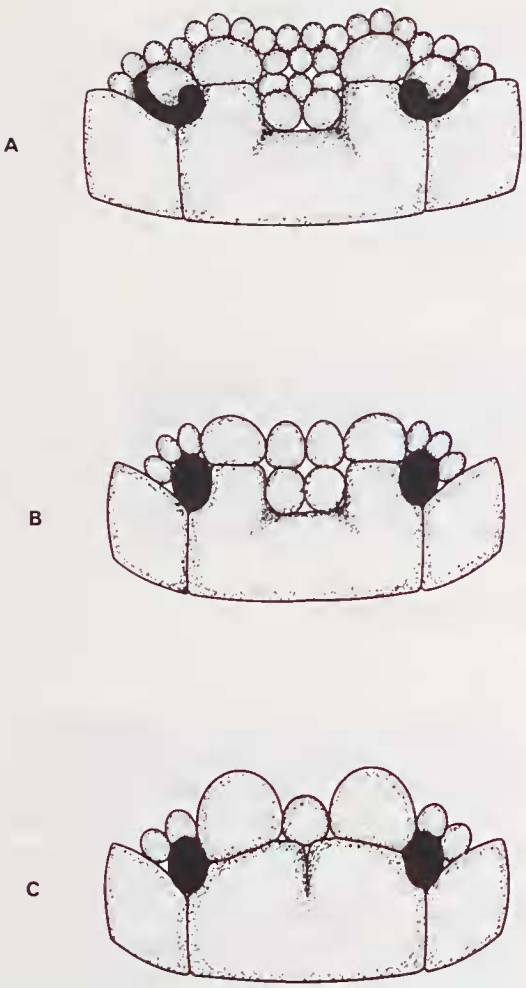

Fig. 1. A, A diagrammatic representation of the snout tip of a typical *Gehyra baliola* drawn from AM R.29947 from Darnley Island, which was also the lectotype of *Peripia brevicaudis* Macleay, 1877. B, A diagrammatic representation of the tip of the snout of a *Gehyra* sp. AM R.48368 from Saibai Island, Torres Strait. Note the difference in form of the 'U' shaped rostral and associated nasal and internasals in this and *Gehyra baliola*. C, A diagrammatic representation of the tip of the snout of *Gehyra* sp. AM R.48220 from Saibai Island, Torres Strait. This morphology is characteristic of *Gehyra dubia*.

141°26'E; AM R.122116, Wipim, 8°47'S 142°53'E; AM R.122399-402, Fogamaiyu, 6°31'S 143°05'E; AM R.122403-06, Waro Bush Camp, 6°31'S 143°11'E; PNGM 23654, Brown River, 9°20'S 147°30'E; QUEENSLAND: AM R.43899-900, AM R.44228-29, AM R.45912-13, AM R.45944, AM R.46090, Murray Island, Torres Strait, 9°56'S 144°04'E.

Comparative specimens of *Gehyra* spp from Torres Strait and Cape York Peninsula examined: AM R.42252-53, Hammond Island, 10°32'S 142°13'E; AM R.48220-21, AM R.48223, AM R.48237, AM R.48306, AM R.48331, AM R.48345, AM R.48368, AM R.48371, Sabai Island, 9°24'S 142°42'E; AM R.48396-98, AM R.48418, Horn Island, 10°37'S 142°17'E; AM R. 64233, Moa Island, 10°11'S 142°16'E; AM R.82377, AM R.82434, AM R.91618, Weipa, 12°38'S 141°52'E; AM R.91455, AM R.91637, 67km N. Weipa, 12°03'S 141°53'E; AM R.94160-62, Portland Roads, 12°36'S 143°25'E; AM R.94350-51, Cockatoo Creek, 11°40'S 142°21'E; AM R.94405-06, 53km E. Weipa, 12°45'S 142°16'E; AM R.94471, Iron Range, 12°46'S 143°16'E; AM R.94517, Tozer Range, 12°47'S 143°13'E.

The distribution of *Gehyra baliola* in Australia. In 1963 Kluge reclassified a series of specimens from the Macleay Museum collection, placing these into what he considered to be a more appropriate nomenclature. Among the changes made was incorporating *Peripia marmorata* Macleay (collected at Katau, New Guinea) into synonymy with *Gehyra baliola* (Duméril and Duméril, 1851), a common New Guinean form, and the inclusion of *Peripia brevicaudis* Macleay (collected on Darnley Island, Torres Strait, Queensland) with *Gehyra baliola*. Thus, *Gehyra baliola* became an Australian species. However, the diagnostic characteristics provided for *G. baliola* by Kluge (1963) have a series of deficiencies preventing clear species identification.

Table 1. Morphometric and meristic characteristics from 25 specimens of *Gehyra baliola* sampled from localities shown in Fig. 2. Measurements are in mm.

CHARACTERISTIC	MEAN	RANGE
Snout-vent length	84.4	67.0 - 101.0
Tail length (n = 5)	72.8	67.0 - 79.0
Forelimb length	23.0	19.1 - 30.6
Hindlimb length	29.1	22.4 - 36.0
Head width	14.4	12.1 - 17.9
Head depth	8.8	7.0 - 10.8
Ear-snout length	19.0	16.2 - 23.1
Nostril-snout length	1.5	1.1 - 2.0
Eye-snout length	8.6	7.2 - 10.9
Postmental scale length	2.6	2.2 - 3.1
Number of scales between eyes	44.7	36.0 - 50.0
Number of granular internasal scales	9.0	6.0 - 12.0
Number of supralabial scales	12.6	11.0 - 14.0
Number of infralabial scales	10.4	9.0 - 12.0
Number of mid-body scale rows	143.8	128.0 - 162.0
Number of fourth toe, subdigital lamellae	14.7	12.0 - 16.0
Number of preanal pores	31.8	28.0 - 34.0
Number of postanal spines	3.13	3.0 - 4.0
Tail length to snout-vent length ratio (n=5)	1:1.2	1:1.1 - 1:1.3
Head depth to head width ratio	1:1.6	1:1.5 - 1:2
Head depth to head length ratio	1:2.2	1:1.8 - 1:2.5
Postmental scale length to snout-vent length ratio	1:32.7	1:28.3 - 1:42.7

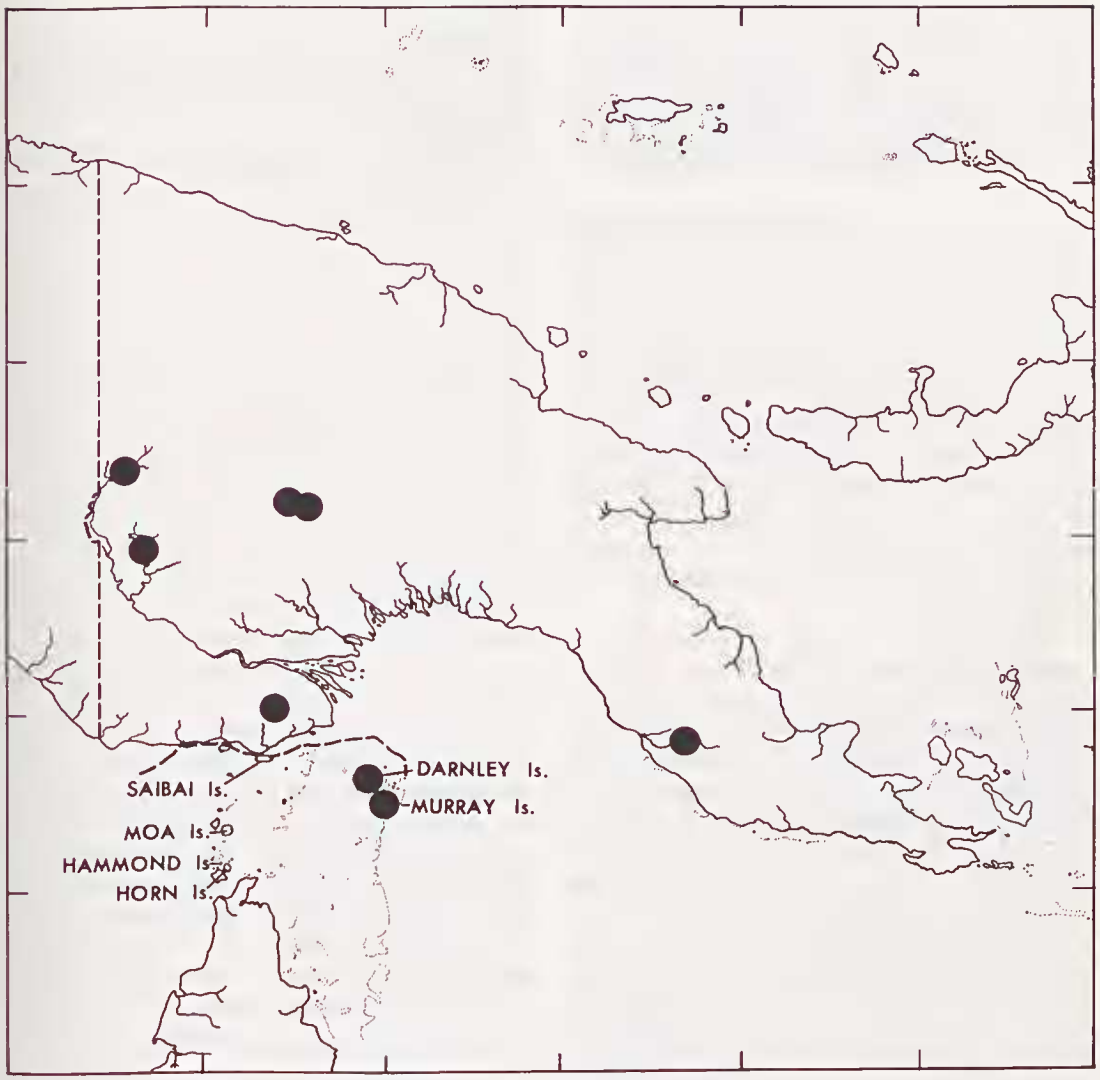

Fig. 2. The distribution of specimens of *Gehyra baliola* examined in this study.

The diagnostie feature used by Cogger (1986) to differentiate *G. baliola* from *G. dubia* is the presenee of a cutaneous fold along the hind edge of the hindlimb. Similarly, King (1983) also defined this eharaeter as the main distinguishing feature between *G. baliola* and the Australian *G. australis* species group members. Beeause of the difficulty of distinguishing speeimens of *G. baliola* on this feature alone, a detailed morphologieal analysis has been made on *G. baliola* to redefine its dominant charaeteristics.

Morphology. A series of 25 speeimens of *Gehyra baliola* from New Guinea and certain Torres Strait Islands were examined and a detailed tabular summary of the morphologieal characteristics of this species is provided in Table 1.

Gehyra baliola is a distinctive species readily distinguished by the following combination of charaeters: large size (maximum SVL 101mm); number of preanal pores in males 28-34; presenee of a eutaneous fold along hind edge of hindlimb (best developed in adult males); toes strongly dilated with 12-16 subdigital lamellae beneath expanded portion of fourth toe, the distal lamellae are divided by a median groove; internasal region fragmented, the "U" shaped rostral sealc with 6-12 small granular seales filling the gap to the top of the adjacent large internasals (Fig. 1); the nasal aperture typieally "comma" shaped with the

nasal scale occluding part of the aperture (Fig. 1); tail ovoid, dorso-ventrally compressed with pronounced lateral ridges giving impression of being roughly triangular in section. This combination of characters serves to separate *G. baliola* from all other Australian *Gehyra*.

Of the abovementioned morphological characteristics, the rostral scale "shape" appears to be the least robust, for whilst a "U" shaped rostral is characteristically present in *Gehyra baliola* specimens, a similarly shaped rostral is present in odd specimens from the *G. australis* complex (Fig. 1). Kluge (1963) assigned R 29947, a lectotype of *Peripia brevicaudis*, to *Gehyra baliola* using this among other characters, yet R 29949 which he synonymised with *G. variegata* also has a "U" shaped rostral. It is preferable to use the suite of characters outlined above rather than any single character.

Examination of the holotype of *Hemidactylus baliolus* (MNHN 6574) (the holotype of *Gehyra baliola*), the holotype of *Peripia marmorata* (R 29943), and the lectotype of *Peripia brevicaudis* (R 29947) leaves little doubt that all three are *Gehyra baliola*, confirming the distribution of this species in Australia. Examination of all specimens of Torres Strait *Gehyra* in the Australian Museum show that *G. baliola* occurs only on the volcanic Murray and Darnley Islands on the northeastern edge of the Great Barrier Reef, and on mainland New Guinea. The distribution of specimens of *Gehyra baliola* examined in this study is shown in Figure 2. The specimens of *Gehyra* referred to by Cogger (1986) as *G. baliola* from the northern portion of Cape York Peninsula presumably belong to an undescribed taxon. Indeed King (1984b) has shown that these specimens are chromosomally distinct from *G. dubia*.

The status of *Gehyra dubia* and *Gehyra oceanica* in Torres Strait. Specimens of *Gehyra* inhabiting the northern Torres Strait Islands differ from mainland and southern Torres Strait Island specimens in being of larger size, and in having a tendency for the skin to be shed in large patches during capture. This northern form was observed (by Sadlier) on Yam Island where it was abundant, and active at night both on tree trunks and low outcropping boulders. A detailed morphological examination of these specimens is necessary before the status of this form is determined. It appears that *G. dubia* is also present on some of the more southern islands in Torres Strait: i.e. Horn, Hammond and Moa Islands (Fig. 2).

Cogger (1986) records *Gehyra oceanica* questioningly from the tip of Cape York and with certainty from some Torres Strait Islands. Mitchell (1965) also questions previous citations of this species from mainland Australia, but comments on the existence of an old exhibition in the South Australian Museum labelled *Gehyra mutilata* from Mulgrave Island, which Mitchell assumed to be a specimen of *G. oceanica* from the Torres Strait. There is little chance of confusing *G. oceanica* with other Torres Strait *Gehyra* species. *Gehyra oceanica* has numerous undivided lamellae beneath the expanded portion of the toes; a rounded tail (in section) with paired enlarged subcaudal scales; generally a single internasal scale; and numerous (26-44) preanal pores. The first 3 of these characters will distinguish *G. oceanica* from *G. baliola*, and the latter 2 from *G. dubia*. We have been unable to locate specimens of this species in Australian museum collections from either mainland Australia or the Torres Strait Islands, and its presence in these regions remains unsubstantiated aside from the reference by Mitchell to the exhibition specimen from Mulgrave Island. We therefore believe that *Gehyra oceanica* does not occur on these islands and that large specimens of *G. baliola* may have been confused with that species.

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